
10. Sticks into Polygons

Program Name: Sticks_Polygon.java

Input File: stickspolygon.dat

You are given a box of sticks of different lengths. What is the maximum number that you can use to form a polygon? The polygon's area has to be strictly > 0 .

Input

The first line has the number of testcases, T . $2 \cdot T$ lines follow, two lines for each testcase.

The first line of each testcase line contains N , the number of sticks you have. The next line contains N integers separated by spaces, the length of each stick.

Output

For each testcase, print out the maximum number of sticks that can be used to form a polygon of area > 0 . If no polygon can be formed, print -1 .

Constraints

$1 \leq T \leq 10$
 $3 \leq N \leq 20$
 $1 \leq \text{Lengths} \leq 20$

Example Input File

```
3
3
1 2 3
4
4 2 1 3
4
1 2 8 2
```

Example Output to Screen

```
-1
4
3
```

Explanation for the third testcase

A triangle can be formed from sticks of length 1, 2, and 2, excluding the stick of length 8.